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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SMITH, PETER J

ART UNIT PAPER NUMBER

2176

DATE MAILED: 01/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/629,831

Applicant(s)

KREULEN ET AL.

Examiner

Peter J Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to communications: application filed on 09/07/2000.
2. Claims 1-17 are pending in the case. Claims 1, 6, and 11 are independent claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostoff et al. (hereafter referred to as Kostoff), US 5,440,481 patented 08/08/1995 in view of Kirsch et al. (hereafter referred to as Kirsch), US 6,070,158 filed 11/13/1997.**

Regarding independent claim 1, Kostoff teaches determining a frequency of each word in each document in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches creating a table of most frequently occurring words in the documents in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches determining a frequency of phrases in each document that could contain only words in a table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches outputting the most frequently occurring words and most frequently occurring phrases as a dictionary in fig. 2 and col. 4 lines 64-68.

Kostoff does not teach creating and using a hashtable. Kirsch does teach creating and using a hashtable in fig. 5 and col. 12 lines 25-29. It would have been obvious to one of ordinary

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skill in the art at the time the invention was made to have combined Kirsch into Kostoff to have created the claimed invention. It would have been obvious and desirable to have incorporated the hashtable taught by Kirsch into the word and phrase frequency counting invention of Kostoff so that the operation of the table would have been more time efficient, thus saving the user time.

Regarding independent claim 6, Kostoff teaches determining a frequency of each word in each document in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches creating a table of most frequently occurring words in the documents in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches determining a frequency of phrases in each document that could contain only words in a table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches outputting the most frequently occurring words and most frequently occurring phrases as a dictionary in fig. 2 and col. 4 lines 64-68.

Kostoff does not teach creating and using a hashtable. Kirsch does teach creating and using a hashtable in fig. 5 and col. 12 lines 25-29. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Kirsch into Kostoff to have created the claimed invention. It would have been obvious and desirable to have incorporated the hashtable taught by Kirsch into the word and phrase frequency counting invention of Kostoff so that the operation of the table would have been more time efficient, thus saving the user time.

Kostoff does not explicitly teach the creation of the word and phrases lists in two separate passes through the document. One of ordinary skill in the art at the time of the invention would have known how to create the two lists in separate passes through the document. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use their

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skill in the art to have created each list as a result of each of two passes through the document. This would have been obvious and necessary in order to create the second list since the phrase selection would have been dependent on the contents of the first list.

Regarding independent claim 11, Kostoff teaches determining a frequency of each word in each document in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches creating a table of most frequently occurring words in the documents in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches determining a frequency of phrases in each document that could contain only words in a table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches outputting the most frequently occurring words and most frequently occurring phrases as a dictionary in fig. 2 and col. 4 lines 64-68.

Kostoff does not teach creating and using a hashtable. Kirsch does teach creating and using a hashtable in fig. 5 and col. 12 lines 25-29. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Kirsch into Kostoff to have created the claimed invention. It would have been obvious and desirable to have incorporated the hashtable taught by Kirsch into the word and phrase frequency counting invention of Kostoff so that the operation of the table would have been more time efficient, thus saving the user time.

5. Claims 2-5, 7-10, and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostoff et al. (hereafter referred to as Kostoff), US 5,440,481 patented 08/08/1995 in view of Kirsch et al. (hereafter referred to as Kirsch), US 6,070,158 filed

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11/13/1997 as applied to claims 1, 6, and 11 above, and further in view of Kobayashi, US 5,742,834 patented 04/21/1998 and Turney, US 6,470,307 B1 filed 06/23/1997.

Regarding dependent claim 2, Kostoff teaches adding words to a table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches determining the frequency of each word remaining in the table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches removing words below a frequency level from the table in col. 6 lines 2-64.

Kostoff does not teach removing punctuation and case from the documents. Kostoff does not teach removing stop words from the document. Kostoff does not teach replacing words in the documents with synonyms. Kostoff does not teach removing duplicate words from the documents. Kirsch teaches removing punctuation and case from the documents in col. 12 lines 5-7. Kirsch teaches removing stop words from the document in col. 12 lines 13-15. Kobayashi teaches replacing words in the documents with synonyms in fig. 3, 34-35, and col. 1 line 54 – col. 2 line 13. Turney teaches removing duplicate words from the documents in col. 5 lines 37-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Kirsch, Kobayashi, and Turney into Kostoff to have created the claimed invention. It would have been obvious and desirable to have combined the punctuation and stop word removal technique of Kirsch into Kostoff so that the documents passes would have been more efficient. It would have been obvious and desirable to have combined the synonym word replacement of Kobayashi into Kostoff so that the word counts could have been uniform across all of the documents, which would have yielded the most accurate clustering

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results. It would have been obvious and desirable to have combined the duplicate word removal of Turney into Kostoff so that the lists would have been uniform among all the documents in the cluster. This would have yielded the most accurate clustering results among the documents.

Regarding dependent claim 3, Kostoff teaches inputting one or more stop words, synonyms and a frequency level in col. 4 lines 39-49, col. 5 lines 59-64, and col. 6 lines 60-64.

Regarding dependent claim 4, Kostoff teaches adding words to a table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches determining the frequency of each word remaining in the table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches removing words below a frequency level from the table in col. 6 lines 2-64.

Kostoff does not teach removing punctuation and case from the documents. Kostoff does not teach removing stop words from the document. Kostoff does not teach replacing words in the documents with synonyms. Kostoff does not teach removing duplicate words from the documents. Kirsch teaches removing punctuation and case from the documents in col. 12 lines 5-7. Kirsch teaches removing stop words from the document in col. 12 lines 13-15. Kobayashi teaches replacing words in the documents with synonyms in fig. 3, 34-35, and col. 1 line 54 – col. 2 line 13. Turney teaches removing duplicate words from the documents in col. 5 lines 37-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Kirsch, Kobayashi, and Turney into Kostoff to have created the claimed invention. It would have been obvious and desirable to have combined the punctuation and stop word removal technique of Kirsch into Kostoff so that the documents passes would

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have been more efficient. It would have been obvious and desirable to have combined the synonym word replacement of Kobayashi into Kostoff so that the word counts could have been uniform across all of the documents, which would have yielded the most accurate clustering results. It would have been obvious and desirable to have combined the duplicate word removal of Turney into Kostoff so that the lists would have been uniform among all the documents in the cluster. This would have yielded the most accurate clustering results among the documents.

Regarding dependent claim 5, Kostoff teaches inputting one or more stop words, synonyms and a frequency level in col. 4 lines 39-49, col. 5 lines 59-64, and col. 6 lines 60-64.

Regarding dependent claim 7, Kostoff teaches adding words to a table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches determining the frequency of each word remaining in the table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches removing words below a frequency level from the table in col. 6 lines 2-64.

Kostoff does not teach removing punctuation and case from the documents. Kostoff does not teach removing stop words from the document. Kostoff does not teach replacing words in the documents with synonyms. Kostoff does not teach removing duplicate words from the documents. Kirsch teaches removing punctuation and case from the documents in col. 12 lines 5-7. Kirsch teaches removing stop words from the document in col. 12 lines 13-15. Kobayashi teaches replacing words in the documents with synonyms in fig. 3, 34-35, and col. 1 line 54 – col. 2 line 13. Turney teaches removing duplicate words from the documents in col. 5 lines 37-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Kirsch, Kobayashi, and Turney into Kostoff to have created the claimed invention. It would have been obvious and desirable to have combined the punctuation and stop word removal technique of Kirsch into Kostoff so that the documents passes would have been more efficient. It would have been obvious and desirable to have combined the synonym word replacement of Kobayashi into Kostoff so that the word counts could have been uniform across all of the documents, which would have yielded the most accurate clustering results. It would have been obvious and desirable to have combined the duplicate word removal of Turney into Kostoff so that the lists would have been uniform among all the documents in the cluster. This would have yielded the most accurate clustering results among the documents.

Regarding dependent claim 8, Kostoff teaches inputting one or more stop words, synonyms and a frequency level in col. 4 lines 39-49, col. 5 lines 59-64, and col. 6 lines 60-64.

Regarding dependent claim 9, Kostoff teaches adding words to a table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches determining the frequency of each word remaining in the table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches removing words below a frequency level from the table in col. 6 lines 2-64.

Kostoff does not teach removing punctuation and case from the documents. Kostoff does not teach removing stop words from the document. Kostoff does not teach replacing words in the documents with synonyms. Kostoff does not teach removing duplicate words from the documents. Kirsch teaches removing punctuation and case from the documents in col. 12 lines 5-7. Kirsch teaches removing stop words from the document in col. 12 lines 13-15. Kobayashi

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teaches replacing words in the documents with synonyms in fig. 3, 34-35, and col. 1 line 54 – col. 2 line 13. Turney teaches removing duplicate words from the documents in col. 5 lines 37-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Kirsch, Kobayashi, and Turney into Kostoff to have created the claimed invention. It would have been obvious and desirable to have combined the punctuation and stop word removal technique of Kirsch into Kostoff so that the documents passes would have been more efficient. It would have been obvious and desirable to have combined the synonym word replacement of Kobayashi into Kostoff so that the word counts could have been uniform across all of the documents, which would have yielded the most accurate clustering results. It would have been obvious and desirable to have combined the duplicate word removal of Turney into Kostoff so that the lists would have been uniform among all the documents in the cluster. This would have yielded the most accurate clustering results among the documents.

Regarding dependent claim 10, Kostoff teaches inputting one or more stop words, synonyms and a frequency level in col. 4 lines 39-49, col. 5 lines 59-64, and col. 6 lines 60-64.

Regarding dependent claim 12, Kostoff teaches adding words to a table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches determining the frequency of each word remaining in the table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches removing words below a frequency level from the table in col. 6 lines 2-64.

Kostoff does not teach removing punctuation and case from the documents. Kostoff does not teach removing stop words from the document. Kostoff does not teach replacing words in

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the documents with synonyms. Kostoff does not teach removing duplicate words from the documents. Kirsch teaches removing punctuation and case from the documents in col. 12 lines 5-7. Kirsch teaches removing stop words from the document in col. 12 lines 13-15. Kobayashi teaches replacing words in the documents with synonyms in fig. 3, 34-35, and col. 1 line 54 – col. 2 line 13. Turney teaches removing duplicate words from the documents in col. 5 lines 37-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Kirsch, Kobayashi, and Turney into Kostoff to have created the claimed invention. It would have been obvious and desirable to have combined the punctuation and stop word removal technique of Kirsch into Kostoff so that the documents passes would have been more efficient. It would have been obvious and desirable to have combined the synonym word replacement of Kobayashi into Kostoff so that the word counts could have been uniform across all of the documents, which would have yielded the most accurate clustering results. It would have been obvious and desirable to have combined the duplicate word removal of Turney into Kostoff so that the lists would have been uniform among all the documents in the cluster. This would have yielded the most accurate clustering results among the documents.

Regarding dependent claim 13, Kostoff teaches inputting one or more stop words, synonyms and a frequency level in col. 4 lines 39-49, col. 5 lines 59-64, and col. 6 lines 60-64.

Regarding dependent claim 14, Kostoff teaches adding words to a table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line 65 – col. 7 line 11. Kostoff teaches determining the frequency of each word remaining in the table in fig. 2, table 1, col. 4 lines 50-68, and col. 6 line

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65 – col. 7 line 11. Kostoff teaches removing words below a frequency level from the table in col. 6 lines 2-64.

Kostoff does not teach removing punctuation and case from the documents. Kostoff does not teach removing stop words from the document. Kostoff does not teach replacing words in the documents with synonyms. Kostoff does not teach removing duplicate words from the documents. Kirsch teaches removing punctuation and case from the documents in col. 12 lines 5-7. Kirsch teaches removing stop words from the document in col. 12 lines 13-15. Kobayashi teaches replacing words in the documents with synonyms in fig. 3, 34-35, and col. 1 line 54 – col. 2 line 13. Turney teaches removing duplicate words from the documents in col. 5 lines 37-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Kirsch, Kobayashi, and Turney into Kostoff to have created the claimed invention. It would have been obvious and desirable to have combined the punctuation and stop word removal technique of Kirsch into Kostoff so that the documents passes would have been more efficient. It would have been obvious and desirable to have combined the synonym word replacement of Kobayashi into Kostoff so that the word counts could have been uniform across all of the documents, which would have yielded the most accurate clustering results. It would have been obvious and desirable to have combined the duplicate word removal of Turney into Kostoff so that the lists would have been uniform among all the documents in the cluster. This would have yielded the most accurate clustering results among the documents.

Regarding dependent claim 15, Kostoff teaches inputting stop words in col. 4 lines 39-49, col. 5 lines 59-64, and col. 6 lines 60-64.

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Regarding dependent claim 16, Kostoff teaches inputting synonyms in col. 4 lines 39-49, col. 5 lines 59-64, and col. 6 lines 60-64.

Regarding dependent claim 17, Kostoff teaches inputting a frequency level in col. 4 lines 39-49, col. 5 lines 59-64, and col. 6 lines 60-64.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zhilyaev, US 6,137,911 filed 06/16/1997 discloses classifying documents into one or more clusters corresponding to predefined classification categories by building a knowledge base comprising matrices of vectors which indication the significance of terms with the corpus of text formed by the documents and classified in the knowledge base to each cluster. Chen et al., US 5,745,602 patented 04/28/1998 discloses an automatic method of generating key multi-word phrases free of stop words for a machine readable document on the basis of phrase frequency. Kanno, US 6,493,713 B1 priority filed 04/14/1998 discloses creating a regular expression dictionary and a word index on the basis of a document and a word dictionary. Vaithyanathan et al., US 5,857,179 discloses a computer method and apparatus for determining keywords of documents.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Smith whose telephone number is 703-305-5931. The examiner can normally be reached on Mondays-Fridays 7:00am-3:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H Feild can be reached on 703-305-9792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

PJS
November 18, 2003


JOSEPH H. FEILD
PRIMARY EXAMINER